

AUTOCORRELATION THRESHOLD GENERATION
BASED ON MEDIAN FILTERING FOR SYMBOL
BOUNDARY DETECTION IN AN OFDM RECEIVER

ABSTRACT OF THE DISCLOSURE

An OFDM receiver has an autocorrelation circuit configured for generating autocorrelated power values from samples of received short preamble symbols in a received data packet, and a median filter configured for generating a median autocorrelation value from at least a prescribed minimum number of the autocorrelated signal values. A comparator is configured for detecting a
5 symbol boundary, identifying an end of the short preamble symbols, based on the autocorrelated signal values falling below a threshold that is based on the median autocorrelation value. Hence, the threshold used to identify the symbol boundary is dynamically calculated on a per-packet basis, eliminating errors due to varying energy levels or propagation characteristics from different packet sources; moreover, the median autocorrelation value minimizes effects due to noise components,
10 minimizing false detection errors.